NURSE REPORT

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NURSE REPORT #13 **TRACTOR DRIVER CRUSHED BETWEEN TWO TRACTORS CDHS(COHP)-FI-92-005-13**

Summary

At an onion harvest, a worker was driving a tractor which pulled trailers loaded with onions out of the fields. When he arrived at work, his tractor would not start. This was a 15-20 year-old tractor. The driver hooked his tractor to another tractor with a chain to jump start it. Another driver towed the old tractor.

When his tractor started running, the driver let in the clutch and walked between the two tractors to unhook the chain. The old tractor engine was running roughly and shaking. The shift lever was shaken loose and the clutch engaged. The old tractor powered forward on its own and pinned the driver against the back of the other tractor, crushing his spine and pelvis and eventually killing him.

How could this death have been prevented?

-Give workers equipment that works and is properly maintained. An old tractor that won't start is a hazard on the job.

-Employers should have a safety program that trains workers and tells them about dangers on the job.

-Workers should not put themselves into dangerous situations. The driver stood between two running tractors to unhook the chain.

-Work as a team. The other tractor driver might have been able to warn his partner if he had been watching out for him.

CASE 192-129-01 August 11, 1992

The NURSE (Nurses Using Rural Sentinel Events) project is conducted by the California Occupational Health Program of the California Department of Health Services, in conjunction with the National Institute for Occupational Safety and Health. The program's goal is to prevent occupational injuries associated with agriculture. Injuries are reported by hospitals, emergency medical services, clinics, medical examiners, and coroners. Selected cases are followed up by conducting interviews of injured workers, co-workers, employers, and others involved in the incident. An on-site safety investigation is also conducted. These investigations provide detailed information on the worker, the work environment, and the potential risk factors resulting in the injury. Each investigation concludes with specific recommendations designed to prevent injuries, for the use of employers, workers, and others concerned about health and safety in agriculture.

BACKGROUND

On June 6, 1992, while reviewing the log at the county coroner's office, a nurse from the NURSE Project identified a report of an agriculture-related death. The report stated that a 36 year-old male Hispanic tractor driver, employed by a local produce trucking company, had been killed when he was crushed between two tractors in an onion field. This death occurred on May 27, 1992 at approximately 6:10 a.m.

On June 10, 1992, a nurse from the NURSE project discussed the incident with a bystander who had witnessed the death. On June 16, 1992, the nurse discussed the incident with the brother of the fatally injured tractor driver. The Senior Safety Engineer from the NURSE Project conducted an on-site investigation on June 23, 1992, and discussed the incident with the trucking company manager. NURSE staff also reviewed the sheriff's report, Emergency Medical Service ambulance report and the medical examiner/coroner's records.

The employer notified the California Occupational Safety and Health Administration (Cal/OSHA) on May 27, 1992. Cal/OSHA investigated the incident on July 13, 1992.

At the time of the incident, the trucking company had four employees: two workers, one of whom was killed, the manager and the controller. The NURSE Senior Safety Engineer found that the company had no written injury and illness prevention program at the time of the incident as required by Title 8 California Code of Regulations 3203 -- Injury and Illness Prevention Program. (As of July 1, 1991 the State of California requires all employers to have a written seven point injury prevention program: 1. designated safety person responsible for implementing the program; 2. mode for ensuring employee compliance; 3. hazard communication; 4. hazard evaluation through periodic inspections; 5. injury investigation procedures; 6. intervention process for correcting hazards; and 7. a health and safety program.)

The manager stated that he had trained the fatally injured tractor driver prior to this incident. However, no information was available to verify the nature and extent of this training.

INCIDENT

On May 27, 1992, the injured tractor driver was scheduled to drive an old tractor which would pull a flatbed trailer through onion fields, so that onion pickers could put the onions on the trailer. The tractor driver had arrived at work before 6:00 a.m. and was told by the trucking company manager that one of the tractors would not start. He was told to jump start the tractor. This was a 15-20 year-old caterpillar tractor which has no wheels or tires but instead moves by two continuous metal tracks. The tractor driver attached a chain from this older tractor to a fifth wheel pulled by another tractor. A fifth wheel is used to attach a flatbed trailer to a tractor. It is a combination axle mounted with a large, heavy duty disk called

a "dolly" to which the trailer is attached. A co-worker then towed the old tractor to jump start it.

After the tractor driver succeeded in starting the tractor he dismounted and stepped between this tractor and the fifth wheel dolly attached to the lead tractor to remove the chain. The old tractor started running roughly and slipped into gear. This tractor has a foot clutch and hand clutch and a shift lever which engages and disengages the transmission system. With this type of transmission, the tractor can move forward if the shift lever is not put into neutral and the clutch disengaged. Although the tractor driver was observed to have disengaged the hand clutch before he dismounted, the vibrations could have caused the hand clutch lever to move and the clutch to engage. The tractor began moving forward, and the tractor driver, unaware of the moving tractor, was crushed between the front of the older tractor and the fifth wheel.

A bystander who witnessed this incident immediately came to the aid of the injured tractor driver, who was still pinned between the tractor and the fifth wheel. This person moved the older tractor back and the injured tractor driver fell to the ground. The bystander felt for a pulse and noted that the worker was not breathing. He was not trained in first aid but attempted to give the injured tractor driver artificial respiration. When the co-worker on the lead tractor yelled for help, another worker in an onion picking crew heard him, approximately one quarter of a mile away in the same field. The foreman of the onion picking crew called 911 with his truck radio. The sheriff's department noted that the incident had occurred at 6:10 a.m. Emergency Medical Service (EMS) paramedics were dispatched at 6:15 a.m. and arrived on the scene at 6:39 a.m. The sheriff's department and the California Highway Patrol arrived at the scene after the paramedics. The injured worker was pronounced dead by paramedics at 6:44 a.m.

The coroner listed the cause of death as fracture of the pelvis and lumbral-sacral spine due to crushing of the abdomen and pelvis. Another injury noted in the autopsy was complete transection of the abdominal aorta.

PREVENTION STRATEGIES

1. Employers should have written injury prevention programs[1], regardless of the number of employees. An important component of this program should be the training of workers to recognize and avoid hazards associated with their specific work tasks or equipment they operate. In this incident, it is unclear whether the tractor driver had received specific training on how to safely operate and work around this older tractor.

2. Another important component of a written injury prevention program[1] should be hazard evaluation and communication of hazards associated with specific work tasks or equipment. If the tractor driver had been aware that this tractor had an older style of transmission which would permit the tractor to roll forward under certain circumstances, he might have been more cautious and his death could have been prevented.

3. Employers should ensure that all equipment functions correctly and should not require workers to use older, unreliable equipment. In this incident, the tractor driver was told to jump start the older tractor; this indicates that the tractor was not operating correctly because it would not start. Because the tractor was not running well it vibrated back into gear and crushed the worker. Rather than request the tractor driver to temporarily bypass this problem, the employer should have had the older tractor either fixed or else should have provided the tractor driver with a tractor which was operating correctly. If the tractor driver had not been required to use this older tractor his death could have been prevented.

4. There should always be a person certified in Cardiopulmonary Resuscitation (CPR) on a field work

team. In this incident (which occurred 55 miles away from the nearest hospital emergency department), a bystander (although not certified in CPR), not a co- worker, came to the aid of the injured tractor driver and attempted to ventilate him. Although this injured tractor driver had injuries which were not survivable, the likelihood of surviving such incidents with less severe injuries may depend on rapid access to emergency medical services. Therefore, it is important that initial emergency medical care be available on-site.[2]

5. Remote work crews should have a cellular phone or radio available to contact Emergency Medical Services (EMS) if needed. In this incident, a co-worker yelling for help was heard by another worker about one quarter mile away, which resulted in a delay in summoning appropriate medical help. Although a more rapid EMS response might not have prevented this particular death, in remote work sites such as in this incident, it may increase the chances for survival of less injured field workers in other remote work situations.

6. Standard operating procedures should ensure that employees are never required to intentionally place themselves in hazardous situations to complete a work task. In this incident, the tractor driver positioned himself between two running tractors to disconnect a chain. This action resulted in the worker being in a vulnerable position relative to the tractor locations. If required to jump start the old tractor, a method should have been selected which does not involve having a worker in this vulnerable position. If the worker had not been standing in between the two tractors, he would not have been fatally injured.

7. Workers who are working as a team need to be sure that there is constant communication and visual contact between themselves. In this incident, these workers were working as a team in what was a potentially dangerous situation. If the driver of the lead tractor pulling the older tractor had seen the older tractor begin to roll forward, he might have been able to warn the worker before he was crushed.

1. Title 8 California Code of Regulations 3203 -- Injury and Illness Prevention Program.
2. Title 8 California Code of Regulations 3400 (b): "In the absence of an infirmary, clinic, or hospital, in near proximity to the workplace...a person or persons shall be adequately trained to render first aid."